

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 May 2005 (19.05.2005)

PCT

(10) International Publication Number
WO 2005/045490 A1

(51) International Patent Classification⁷: **G02B 6/10**,
6/12, 6/13

(21) International Application Number:
PCT/GB2004/004420

(22) International Filing Date: 19 October 2004 (19.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0324776.4 23 October 2003 (23.10.2003) GB

(71) Applicant (for all designated States except US): **DOW CORNING LIMITED** [GB/GB]; Cardiff Road, Barry, Glamorgan CF63 2YL (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **CLAPP, Terry, Victor** [GB/GB]; 8 Robert Wallace Close, Bishop's Stortford, Hertfordshire CM23 2TG (GB).

(74) Agent: **ELKINGTON AND FIFE LLP**; Prospect House, 8 Pembroke Road, Sevenoaks, Kent TN13 1XR (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND APPARATUS FOR TRANSFORMING OPTICAL WAVE MODES

(57) Abstract: The present invention provides a method and apparatus for transforming optical wave modes. The apparatus includes a substrate and a first layer of waveguiding material above the substrate, the first layer having a first index of refraction, a first horizontal dimension, and a first vertical dimension. The apparatus also includes a second layer of waveguiding material adjacent the first layer, the second layer having a second index of refraction, a second horizontal dimension, and a second vertical dimension.



WO 2005/045490 A1